

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 73.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007489**Date Inspected:** 02-Jul-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** HoChang, Korea**Location:** Unyang/Changwon, Korea**CWI Name:** Sang Ho Kwak**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Pier E2 bearing and Shear key**Summary of Items Observed:**

The following report is based on METS observations at HoChang Machinery Industries (HCMI). Current work: Casting, forging and machining.

On this date the Caltrans Quality Assurance (QA) inspector, Dong J. Shin arrived at HoChang Machinery Industries (HCMI) located at Unyang, Korea and DooSan Heavy Industries (DHIC) located at Changwon, Korea. The Purpose of this trip was to observe quality control during fabrication and process of following items.

**Forging**

1. Bearing Bottom Housing (B1-07/F07302-010): Transfer to KPC for final machining.
2. Bearing Bottom Housing (B2-07/F07302-020): Transfer to KPC for final machining.
3. Bearing Bottom Housing (B3-07/F07302-030): Transfer to KPC for final machining.
4. Bearing Bottom Housing (B4-07/F07302-040): Transfer to KPC for final machining.
5. Spherical Ring (S1-07/F07302-050): Transfer to KPC for final machining.
6. Spherical Ring (S2-07/F07302-060): Transfer to KPC for final machining.
7. Spherical Ring (S3-07/F07302-070): Transfer to KPC for final machining.
8. Spherical Ring (S4-07/F07302-080): Transfer to KPC for final machining.
9. Solid Shaft (B1-02/F07302-090): Start pre machining for SS overlay welding.
10. Solid Shaft (B2-02/F07302-100): Start pre machining for SS overlay welding.
11. Solid Shaft (B3-02/F07302-110): Transfer to KPC for final machining.
12. Solid Shaft (B4-02/F07302-120): Transfer to KPC for final machining.

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- F number is DooSan Production Number.
- B number is drawing Number.

### Casting

On this date DHIC has started repair welding on following castings, QA inspector, HMIC QC Inspector and DHIC QC inspector has checked welding parameters prior start repair welding. Welding process utilized Flux Core Arc Welding (FCAW) with E81T1-K2, 1.6mm diameter Flux Core wire Manufacture by SEAH-ESAB, Brand name Dual shield 1181-K2. QA inspector checked welding parameters of 23-26 volts, 210-250 amps, travel speed 13-16 cm/min, Gas flow 10-25l/min, preheat temperature over 100°C and 24 hours maintaining preheat temperature. All of welding parameters comply with approved welding procedure specifications No A-F-Z1Z1-219.

1. Bearing Top Housing(B1-06, C07039-010): Continue to repair welding.
2. Bearing Top Housing(B2-06, C07039-020): Continue to repair welding.
3. Bearing Top Housing(B3-06, C07039-030): Transfer to KPC for final machining.
4. Bearing Top Housing(B4-06, C07039-040): Transfer to KPC for final machining.
5. Bearing Hold Down Assembly (B1-01-1, C07039-050): Transfer to KPC for final machining.
6. Bearing Hold Down Assembly (B1-01-2, C07039-060): Transfer to KPC for final machining.
7. Bearing Hold Down Assembly (B2-01-1, C07039-070): Transfer to KPC for final machining.
8. Bearing Hold Down Assembly (B2-01-2, C07039-080): Transfer to KPC for final machining.
9. Bearing Hold Down Assembly (B3-01-1, C07039-170): Transfer to KPC for final machining.
10. Bearing Hold Down Assembly (B3-01-2, C07039-180): Transfer to KPC for final machining.
11. Bearing Hold Down Assembly (B4-01-1, C07039-190): Transfer to KPC for final machining.
12. Bearing Hold Down Assembly (B4-01-2, C07039-200): Transfer to KPC for final machining.
13. Shear Key Stub(S1-01, C07039-090) : Completed PWHT.
14. Shear Key Stub(S2-01, C07039-100) : Transfer to KPC for final machining.
15. Shear Key Stub(S3-01, C07039-110) : Transfer to KPC for final machining.
16. Shear Key Stub(S4-01, C07039-120) : Continue to repair welding.
17. Shear key Housing(S1-03, C07039-130): Completed NDT after repair welding.
18. Shear key Housing(S2-03, C07039-140): Completed final UT.
19. Shear key Housing(S3-03, C07039-150): Continue to repair welding.
20. Shear key Housing(S4-03, C07039-160): Continue to repair welding.

\* S and B number is drawing number.

\* C number is DSHI ID number.

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## Summary of Conversations:

\*Discuss with Mr. S. H. Kwak regarding general project schedule.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Shin,DJ

Quality Assurance Inspector

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**Reviewed By:** Lanz,Joe

QA Reviewer